

prepolymer being prepared from a polyurethane prepolymer formulation including a diisocyanate and an active hydrogen containing material wherein:

the dispersion is formed in a two or more step process wherein,

- (1) in a first step the prepolymer is formed and, in a subsequent step,
- (2) an aqueous dispersion of the prepolymer is formed, in the presence of an anionic surfactant, both steps occurring in the substantial absence of an organic solvent.

20. The polyurethane film of Claim 19, wherein the particle size of the particulates in the dispersion is from 0.9 microns to about 0.05 microns.

Please amend the claims as follows:

A polyurethane film comprising a film prepared from a polyurethane dispersion, the dispersion being prepared from a non-ionic polyurethane prepolymer, and the prepolymer being prepared from a polyurethane prepolymer formulation including a diisocyanate and an active hydrogen containing material wherein:

the dispersion is formed in a two or more step process wherein,

- (1) in a first step the prepolymer is formed and, in a subsequent step,
- (2) an aqueous dispersion of the prepolymer is formed, in the presence of an anionic surfactant, both steps occurring in the substantial absence of an organic solvent; and

further wherein the particle size of the particulates in the dispersion is from 0.9 microns to about 0.05 microns.

3. The polyurethane film according to Claim 1, wherein the active hydrogen containing material is either:

- (a) a mixture of a high molecular weight diol having a weight average molecular weight of from about 1,000 to about 4,000 and a low molecular weight diol having a weight average molecular weight of from about 60 to about 750; or
- (b) a high molecular weight diol having a weight average molecular weight of from about 1,000 to about 4,000

wherein, when the active hydrogen containing material does not include a low molecular weight diol, the prepolymer is dispersed in water which includes a difunctional amine chain extender.

- C2 4. The polyurethane film according to Claim 3 wherein the high molecular weight diol is a polyoxypropylene diol having an ethylene oxide capping of from 0 to 25 percent.

5/11/9. A process for preparing a polyurethane film comprising the steps of:

- (a) preparing a non-ionic polyurethane prepolymer;
- (b) dispersing the prepolymer in water in the presence of an anionic surfactant, the particle size of the particulates in the dispersion being from 0.9 microns to about 0.05 microns; and then
- (c) applying the dispersion to a substrate as a film;

C3 wherein the prepolymer is prepared from a polyurethane prepolymer formulation including a diisocyanate and an active hydrogen containing material; and

wherein steps (a) and (b) both occur in the substantial absence of an organic solvent.

- C6 10. The process according to Claim 9, wherein the diisocyanate is either:

- (a) an aliphatic diisocyanate; or
- (b) an aromatic diisocyanate selected from the group consisting of MDI, TDI, and mixtures thereof; and the active hydrogen containing material is either:
 - (a) a mixture of a high molecular weight diol having a weight average molecular weight of from about 1,000 to about 4,000 and a low molecular weight diol having a weight average molecular weight of from about 60 to about 750; or

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cont.
- (b) a high molecular weight diol having a weight average molecular weight of from about 1,000 to about 4,000; wherein, when the active hydrogen containing material does not include a low molecular weight diol, the prepolymer is dispersed in water which includes a difunctional amine chain extender.

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13. An aqueous polyurethane dispersion, useful for preparing polyurethane films, wherein the particle size of the particulates in the dispersion is from 0.9 to about 0.05, the aqueous polyurethane dispersion comprising the product of dispersing in water a nonionic polyurethane prepolymer prepared from a prepolymer formulation including a diisocyanate and a mixture of diols wherein:

the dispersion is formed in a two or more step process wherein,

- (1) in a first step the prepolymer is formed and, in a subsequent step,
- (2) an aqueous dispersion of the prepolymer is formed, in the presence of an anionic surfactant,

both steps occurring in the substantial absence of an organic solvent.

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15. The dispersion of Claim 13, wherein the mixture of diols is a mixture of a high molecular weight diol having a weight average molecular weight of from about 1,000 to about 4,000 and a low molecular weight diol having a weight average molecular weight of from about 60 to about 750.

REMARKS

Claims in Application

Claims 6 and 17 have been cancelled from this application. Claims 19 and 20 have been added to this application. Claims 1, 3, 4, 9, 10, 13, and 15 have been amended. Accordingly, Claims 1-5, 7-16, and 18-20 are active in this application. Reconsideration is respectfully requested.